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ABSTRACT

This module on evaluating and recording student progress is 1 in a series of 10 modules written for vocational education teacher education programs. It is designed to give a basic understanding of the principles and practices associated with assigning grades and translating these "marks" into meaningful outcomes. Introductory materials include the following: a listing of competencies/tasks to be covered, objective, overview of the module, listing of suggested resources, and content/instructional strategies, including prerequisite information. The module covers these topics: role of grades; traditional grading system; satisfactory-unsatisfactory or pass-fail grading systems; pitfalls of grading; advantages of a competency-based system of evaluation; assigning grades in a competency-based program; and converting student performance into grades. A summary and review concludes the module. Seven transparencies are appended. (YLB)

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MODULE:

Evaluating And Recording Student Progress

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Notes

MODULE: EVALUATING AND RECORDING STUDENT PROGRESS

Competencies/Tasks:

Determine student grades in a vocational course/program utilizing competency mastery.

Record and monitor student progress.

Objectives:

Upon completion of this module students will be able to:

1. Describe the process of assigning "marks" for tasks completed.
2. Distinguish between the following terms: (1) mastered, (2) mastered with supervision, (3) not mastered, and (4) no exposure when determining the level of competence of a student.
3. Identify problems that are associated with traditional grading practices.
4. Describe the procedure and process by which grades are/can be determined.
5. Identify the characteristics of efficient grading practices.
6. Describe procedures used for recording achievement/criteria including: (1) hand versus machine, (2) charts, (3) graphs, and (4) records.
7. Describe how numerical scores can be translated into grades.
8. Describe how the mastery level learning procedure can be translated into grades.
9. Distinguish between formative and substantive assessment.

Overview of Module:

This module examines the broader question of grading. Grading practices, procedures and systems will be studied, the assignment of "marks" and how they are/should be determined will also be examined, along with various methods that can be used to record achievement.

In summary, this module is designed to give a basic understanding of the principles and practices associated with assigning grades and translating these "marks" into meaningful outcomes.

Notes

Suggested Resources

1. Supplies, handouts, media, guest lecturers, etc.
   - transparencies #I-VII
2. Assignment
   - describe the extent to which, if any, that a student's personality be taken into consideration when assigning grades.
   - list reasons that form the basis for deciding that "pass" or "fail" is, or is not, an adequate marking system.
   - describe what would be considered the best scheme for grading a production job in the industrial, vocational, technical or health occupations laboratory.
   - describe why a marking system, based upon the standard curve should or should not be the compulsory assessment method used by teachers. Provide rationale which was used to form the basis of your decision.
   - identify the strengths and weaknesses of an open grading system and why it would or would not discourage the less able students. Provide rationale on why students should or should not be required to do homework?
3. References and Bibliography
   - American Association for Vocational Instructional Materials Modules #D-5

Content/Instructional Strategies

Prerequisite Information:

Before undertaking this module, students should have already been exposed to and mastered duties H-8 through H-12. These are the competencies/tasks which form the basis of the module entitled Preparing Effective Teacher-Made Evaluations.

Introduction:

Grades are an inherent part of the educational process. Assigning grades to students though is probably one of the least, if not the least popular tasks that vocational educators are required to perform. This act, however, has tremendous impact in terms of how: (a) students feel about themselves, and (b) employers feel about students as potential employees.

The assignment of grades or marks as they are sometimes called, is a crucial part of the professional responsibility which an instructor must assume. It is a process that can consume a great deal of time and energy and do little to communicate how well a student understands a concept or can perform a task. While there are continued calls for abolishing grading, it is still very much with us and has important functions in education.

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Body of Lesson:

Any evaluation system that is adopted should do more than simply place students in convenient groups or categories. Competency based vocational education provides the philosophical base for giving true meaning to the process of evaluation through mastery learning. This system, if followed, can provide a valid basis for assigning marks to reflect outcome learning. Using educationally sound methods of evaluating students (competency based instruction) and accurate procedures for record keeping and computation (VAMS) will also help the vocational educator to make grading a less time-consuming task. It also has the potential to help ensure that the grades assigned will be an accurate reflection of student ability.

Students will be more willing to work within the grading system if it is understandable and justifiable. Students are more likely to accept the judgment of the instructor if the process is open and is clearly fair and equitable.

In addition, valid grades can provide students with valuable information about their progress and achievement. Your competence in student grading can thus make an important contribution to the teaching/learning process.

Grades play a vital and active role in the overall instructional process as they provide many basic functions:

- Placement — basis for promoting students, identifying students for special programs, placing students in advanced and remedial classes, grouping by interest, etc.
- Guidance — starting place for assisting students to evaluate their own academic strengths and weaknesses.
- Motivation — incentive to learn. Care must be taken though, as grades can be over-emphasized and thus can lead to high levels of anxiety and frustration.
- Progress — keep the student abreast of how well they are mastering the competencies.

In essence, grades are meant to translate performance into symbols which are understood by the people to whom they are reported (student, parent, administration, etc.).

It should be remembered that grades represent judgments that a teacher makes about a student's achievement of the performance objective and specific criteria within a course. On the humorous side, grades and grading do not always reach these lofty goals.

> "A grade is an inadequate report of an inaccurate judgement by a biased and variable judge of the extent to which a student has attained an undefined level of mastery of an unknown proportion of an indefinite amount of material."

Notes

Transparency # I - Course Grade

A grading system should be used as a vehicle for arriving at and reporting judgments so that they are meaningful to others. Therefore, much care should be exercised when selecting a grading system.

A. Traditional Marking System

Traditional marks are commonly used to evaluate tests, quizzes, and written work. They can also be used to evaluate laboratory work. It is crucial that the instructor and student have a clear understanding of the criteria that go into the evaluation scheme.

Guidelines for the assignment of grades should be established, an example of which might include the following criteria:

A = Excellent ————	highest quality, completed task on time, work beyond minimum standard
B = Very Good ————	good quality, generally completed task on time with much precision, completes all assignments
C = Average ————	meets minimum quality standard, sometime completed task on time, some precision
D = Poor ————	below standard, tasks not completed on schedule, barely acceptable
F = Failure ————	unacceptable, tasks not often completed, if at all

Other letters such as "E", "I", "M", etc. may be substituted for the "A" through "F" in this example.

Many vocational educators prefer to use percentage ranges in evaluating student performance. Those evaluation schemes must also be understood by all parties (students, parents, administrators, etc.).

An example of this system might be as follows:

- 90% to 100% = Excellent work
- 80% to 89% = Very good work
- 70% to 79% = Average work
- 60% to 69% = Poor work
- Below 60% = Failure

Letter grades may also be attached to the example. Many instructors, however, want to indicate progress to students more precisely than traditional letter grades so they devise a system which utilizes pluses and minuses.

A+ (98% to 100%) = Exceptional work
A (94% to 97%) = Superior work
A- (90% to 93%) = Excellent work
B+ (87% to 89%) = Very good work
B (84% to 86%) = Good work
(ETC.)

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B. Satisfactory-Unsatisfactory or Pass-Fail

For certain tasks, the traditional marking system may prove to be inadequate. For instance, if a student is assigned to lay out and cut a rafter to the proper angle (product evaluation) and length and it is too short, a grade of "C" or "D" is inadequate. In such cases, an evaluation scheme such as Satisfactory-Unsatisfactory or Pass-Fail is much more appropriate. The health care professions have many tasks which must be accomplished in an established order (process evaluation). Any deviation will invalidate the process and bring potential danger (death) to the patient. In such cases, a more drastic system of Pass-Failure may be appropriate.

In all cases, students must understand that the criteria is designed to assess their level of competence before they are assigned to know/perform the task.

Many other variations of assessment (grading) may be used such as written evaluations, skill reports, self-evaluations, and contract grading, to mention but a few.

Regardless of the grading system that is adopted, the instructor needs to continually strive for improvement.

All things considered, it is recommended that only raw scores be reported during a course because letter grades or percentages on measures of different weight can be misleading. If an instructor accumulates a student's raw scores on several measures during a course, only one translation to a letter grade is required at the end of the course. This problem will be eliminated entirely if a VAMS System is used since the calculations are automatic. Most students and parents can understand the translation of raw scores or even percents into grades. It goes without saying that not everyone will be in agreement with the cutoff point (Ex: between A and B or C and D), but there is no substitute for the instructor's judgment based on experience and coupled with well articulated criteria.

Grading, by its very nature, is judgmental. As such, we need to guard against pitfalls.

A. One of the greatest shortcomings of grading systems now in use in traditional education and training programs is that grades are not an accurate indication of what each student has learned.

    1. Grades are nothing more than the instructor's best estimate of how each student has performed in comparison to the group norm.

B. Norm-referenced grading systems, in which a student's performance is compared to the performance of other students, do not accurately reflect the human competence of the student and are therefore inappropriate for use in competency-based programs.

    1. Test scores and grades should reflect the actual competence of each individual student, not the relative competence of the student as compared to his or her fellow student.

    2. The only way to keep grades from being relative is to base them on some predetermined, rigid criterion.

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C. A truly competency-based program must evaluate students using a criterion-reference approach, in which individual student's performance is compared to a predetermined standard of competence.

D. Giving grades is not bad; evaluating student mastery of learning tasks and reporting student progress regularly enhances learning, encourages excellence, is necessary for accountability, is the only way instruction can be evaluated, and is just good sense.

Transparency # II - Grading

If a competency-based system of evaluation has been adopted, then many of the shortcomings of a norm-based system will have been overcome.

A. Any grading system for reporting periodic student progress is in tune with competency-based approach if the following are true:

1. Every student has an equal opportunity to each grade possible.

2. Every student knows ahead of time exactly what is required for earning each grade possible. At any point in time, a student should be able to compute his or her grade up to that point; the grade is earned — not given.

3. The grade earned by a student is a measure of competence — his or her ability to render worthy performance on the job — and is based solely on task mastery. Attendance, attitudes, and effort are not reflected in the grade, unless written into the objectives of the course.

Transparency # III - Grading Periodic Progress

The means of arriving at course grades is, however, generally a compromise between norm-referenced and criterion-reference grading. As instructors make decisions regarding the extent to which students have learned (level of mastery of a task), they must give careful consideration to the standards by which achievement is to be judged. The more individual student centered the process is (criterion-referenced), the more defensible the grade.

A. The notion of assigning students to either mastery or nonmastery for each task is based on several important assumptions that have been shown to be valid:

1. Most any student can master any task at a high level of proficiency if given the right kind of instruction and enough time.

2. The time it takes a student to master a task has little to do with how well the task can be performed once it is mastered.

B. Students have either mastered a task at the minimum acceptable level for competence or they have not.

1. Assign a yes/no, pass/fail, S/U, or master/nonmastery score to each specific task and set the cutoff score at a high level (95 to 100%), the following will happen:

Notes

a. Most students will reach a high level of proficiency in each task since the criterion for mastery has been set at a high level.

b. Students will be better prepared for subsequent tasks since early tasks will be mastered at a high level of proficiency.

c. The only students who successfully complete the program will be those who can perform the tasks competently at a specific level.

d. Less able students may require more help but will reach the same level of mastery as more able students providing they "have" time and support!

Transparency # IV - Assigning Grades For Each Task

A. Several approaches to assigning grades in a competency-based program. These include:

1. The number of tasks mastered during the grading period.

2. The level of proficiency in mastering tasks.

3. The number of tasks that were mastered at a proficiency score higher than the minimum level set for mastery.

4. The number of "extras" such as number of other students tutored, attendance, attitudes, and other factors.

B. What is needed is a grading system based on task mastery but one that takes into consideration a student who may have difficulty learning a task or two.

Transparency # V - Recommended Grading System

With increased use of performance objectives (competency-based instruction) as a basis for rating student achievement, it is often necessary to convert the performance ratings (mastery, mastery with supervision, and not mastered) a student receives during an evaluation period (quarter, semester, etc.), to grades that conform to the school's official reporting system.

One method of converting student performance to grades is to use a competency profile to develop a performance checklist. Satisfactory or passing grades may be defined in terms of:

A. number of competencies mastered, mastered with supervision, not mastered

B. number of competencies mastered in a given time frame (quarter) based on an established (agreed upon) number

C. percentage of items mastered to those mastered with supervision or not mastered

D. quality of performance, i.e., the number of times the task had to be repeated before mastery was achieved

E. combination of these schemes

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Transparency # VI - Converting Student Performance Into Grades

Sometimes the criteria for successful performance are not all of equal importance. If the critical elements of the performance can be identified, satisfactory grades can be assigned on the basis of meeting the critical criteria. Above-average grades can then be assigned on the basis of meeting the critical criteria plus demonstrating skill in some of the less critical elements of performance.

An example of the components that could be used for grade conversion might include the following:

Typesetting (Mid-term) Report

Letter Grade	Gross Words per Minute (5 minutes)	Maximum Errors
A	66	3
B	61-65	3
C	56-60	3
D	51-55	3

The minimum acceptable level of performance (standard) for a 5-minute test of straight composition is 51 words per minute with no more than 3 errors. Students who type faster than the minimum level (required for mastery) receive proportionately higher grades as illustrated above.

Transparency # VII - Sample Grade Conversion

Summary and Review

In summary, many methods are available to assist in the translation of numerical scores (raw scores) into letter grades. The easiest approach to communicate to students and parents is the conversion of raw scores into percents. With the development of computer software, such as is available through VAMS, much of the laborious calculation of percents from raw scores can be handled quickly and accurately. Modern software will also convert the percentages into letter grades if that is the school's official reporting system.

As we move further into the '90's, we will hear more about accountability. Competency based instruction provides an extremely high degree of accountability, the outcomes of which can be translated into a number of grading systems.

Course Grade

- A grade is an inadequate report of an inaccurate judgement by a biased and variable judge of the extent to which a student has attained an undefined level of mastery of an unknown proportion of an indefinite amount of material.

Grading

A. One of the greatest shortcomings of grading systems now in use in traditional education and training programs is that grades are not an accurate indication of what each student has learned.
   1. Grades are nothing more than the instructor's best estimate of how each student has performed in comparison to the group norm.

B. Norm-referenced grading systems, in which a student's performance is compared to the performance of other students, do not accurately reflect the human competence of the student and are therefore inappropriate for use in competency-based programs.
   1. Test scores and grades should reflect the actual competence of each individual student, not the relative competence of the student as compared to his or her fellow student.
   2. The only way to keep grades from being relative is to base them on some predetermined, rigid criterion.

C. A truly competency-based program must evaluate students using a criterion-referenced approach, in which individual student's performance is compared to a predetermined standard of competence.

D. Giving grades is not bad; evaluating student mastery of learning tasks and reporting student progress regularly enhances learning, encourages excellence, is necessary for accountability, is the only way instruction can be evaluated, and is just good sense.

Grading Periodic Progress

A. Any grading system for reporting periodic student progress is in tune with competency-based approach if the following are true:

1. Every student has an equal opportunity to each grade possible.
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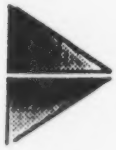

Assigning Grades for Each Task

A. The notion of assigning students to either mastery or non-mastery for each task is based on several important assumptions that have been shown to be valid:
   1. Most any student can master any task at a high level of proficiency if given the right kind of instruction and enough time.
   2. The time it takes a student to master a task has little to do with how well the task can be performed once it is mastered.

B. Students have either mastered a task at the minimum acceptable level for competence or they have not.
   1. Assign a yes/no, pass/fail, S/U, or master/non-mastery score to each specific task and set the cutoff score at a high level (95 to 100%), the following will happen:
      a. Most students will reach a high level of proficiency in each task since the criterion for mastery has been set at a high level.
      b. Students will be better prepared for subsequent tasks since early tasks will be mastered at a high level of proficiency.
      c. The only students who successfully completed the program will be those who can perform the tasks competently at a specific level.
      d. Less able students may require more help but will reach the same level of mastery as more able students providing they "have" time and support!

Transparency IV: Assigning Grades for Each Task

Recommended Grading System

A. Several approaches to assigning grades in a competency-based program. These include:

1. The number of tasks mastered during the grading period.

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4. The number of "extras" such as number of other students tutored, attendance, attitudes, and other factors.

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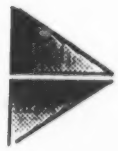


Converting Student Performance into Grades

The following criteria could serve as a basis for converting student performance into a grade.

A. **Number of competencies mastered, mastered with supervision, not mastered**

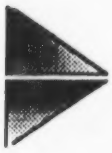
B. **Number of competencies mastered in a given time frame (quarter) based on an established (agreed upon) number**

C. **Percentage of items mastered to those mastered with supervision or not mastered**

D. **Quality of performance, i.e., the number of times the task had to be repeated before mastery was achieved**

E. **Combination of these schemes**

Transparency VI: Converting Student Performance into Grades



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